

# Using Pretests

written by

**Elena Berman, Ph.D.**

**Assessment and Faculty Development Specialist  
Assessment and Enrollment Research (AER)  
The University of Arizona**

Pretesting is a useful strategy for beginning a class, especially when classes contain students with mixed abilities coming from a diversity of backgrounds. Pretesting is a way of sampling where the students are relative to the content you're going to teach. It is ungraded and may take many forms, including map-making, providing samples of poetic forms, speaking in public, and responding to a case study, as well as conventional multiple choice or free response formats.

If you present pretesting as an information-gathering, or needs assessment, activity, that will not affect their grades in any way, most students will engage willingly. This is especially likely if you share with them some of the many benefits of pretesting.

## ***Benefits of pretesting***

- provides a preview of course coverage for students
- can act as an "advance organizer," which may improve student learning
- allows for early adjustment based on student interests and prior knowledge
- allows for early identification of student strengths and weaknesses
- improves ability to measure what has actually been learned in a course
- provides a way to get students started as active thinkers during class-time
- offers a potentially powerful tool for introducing students to working in small groups
- provides the instructor a good overview of class composition
- provides data that may be used in tracking student success and other research
- designing a comprehensive pretest helps an instructor review his or her vision for the course (which may or may not be the vision of the students)

Present the pretest as an information-gathering tool and use it to initiate a tradition of active thinking during class-time. Have students first take the pretest individually. Then ask them to compare answers in small groups and compile a group response. (Collect the individual responses for use in identifying advanced or deficient students.) If you plan to have students work together in groups during the semester, this is a powerful way to introduce them to the practice in a non-threatening context where the superiority of the group product will be clearly demonstrated.

Designing a good pretest requires you to have a conceptual overview of the course. This means bringing to consciousness the prerequisites and instructional goals, which makes fine-tuning easier in response to realities of student background and interests as well as

exigencies of curriculum committees and departments.

Pretest data can be used in researching relations between preparedness and achievement. Data can also be used to design remedial modules, support arguments for curriculum change, and document changes in student ability that are a clear result of conscious teaching choices (prima facie evidence of teaching excellence).

***What do pretests cover:***

A comprehensive pretest seeks information about all three of the following areas:

***1) knowledge of the course content***

A pretest usually samples the important concepts of the entire course in such a way that the responses can be compared to responses to assignments or course exams. This gives the students a preview of what they will be expected to learn, while giving you information about how much students already know. If most students are familiar with certain domains of the course content, you can address that content at a higher level. You can also use analogies from areas of greater common knowledge to explain new material. Some research suggests that previewing course content in this fashion actually increases learning by acting as an "advance organizer" for students.

It's a good strategy to collect and retain the pretests and use some of the same questions during the semester and on the final. It's often morale-building for students to see clearly that despite continuing confusion, they actually have learned quite a lot.

As students work the pretest, you can diffuse anxiety by reminding them that if they could answer all the questions, there'd be no point in taking the course.

***2) attitudes about the course content, the course in general, and student goals***

Questions about student attitudes, beliefs, and preconceptions provide invaluable information about areas of high/low curiosity, prejudice, prior (mis)information, etc. that you can draw on to tailor lectures and trigger discussions. An overall course strategy may need shifting if students turn out to have little interest in the course content as you've conceived it, whether the shift is to be a change of focus or a head-on confrontation with student lack of interest.

Information about student goals and interests may suggest improvements in course or assignment design. For example, a class in which student interests cover a wide spectrum may call for an assignment strategy that maximizes options, while a narrower range of interests may suggest group assignments that probe more deeply into a single subject.

***3) knowledge of prerequisite material***

In addition to covering the course content and student attitudes, it is important

to ensure that students are able to do the work required for the course. If students lack prerequisite skills or knowledge, the sooner they find out about it, the better their chances for constructive action (whether that means dropping the course or doing remedial work). If a significant percentage lack prerequisite skills, instructors should consider changing the course to incorporate areas of deficiency.

Inform students unable to meet prerequisites that being successful in the course will be an extra challenge for them. If possible, direct them toward resources for remedying deficiencies. You will be doing both yourself and your students a favor if a deadline date is set when students are again tested and required to demonstrate basic proficiency with prerequisite knowledge.

Studies have shown that students able to solve problems or state generalizations in one realm are often baffled when asked to perform the same tasks in different contexts. That is, even if students can define common statistical terms or physical laws in general terms, they may not recognize them in contexts proper to your course. Therefore, pretesting for background knowledge should involve questions using the terminology and content of the course being taught. If you find out that knowledge transfer is a problem, you could provide a review of how terms, concepts, formulae, etc. will be used in the class.

### ***For more information***

Angelo, T.A. and K.P. Cross, Classroom Assessment Strategies, San Francisco: Jossey-Bass Publishers, Second Edition 1993. A compendium of useful ideas for getting feedback from students.

Glenda Wilkes, Thinking About College Teaching, Volume 2, Nos. 5&6, available from the University Teaching Center, 621-7788. One page papers on related topics.